

SYSTEM FOR READING OPTICAL INDICIA

Cross Reference to Prior Application

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Application for patent 09/198,097, filed November 23, 1998, now United States Patent 6,688,523, issued February 10, 2004;
This is a continuation of U.S. ~~Continued Prosecution Application~~ filed May 20, 1998,
which is continuation of U.S. Application for patent 08/345,268, filed November 28, 1994, *abandoned*
which is a continuation of U.S. Application for patent 07/972,822, filed November 6, 1992, *abandoned*
which is a divisional of U.S. Application for patent 07/616,602, filed on November 21, 1990, *abandoned*
which is a continuation-in-part of U.S. Application for patent 07/238,701, filed on August 31, 1988, now United States Patent 5,019,699, issued May 28, 1991.

BACKGROUND OF THE INVENTION

Field of the Invention

The invention relates generally to code readers and particularly to readers which sense optically discernible symbol combinations or codes, such as bar codes.

Discussion of the Prior Art

15 1. Hand-held optical character reading equipment that has been available in the past has not performed well. The reader must be positioned accurately during the entire movement across the label for a valid read to occur. Operators usually "scrub" the label with the reader rather than carefully aligning the reader on the label, and often give up and manually key the information into the terminal.

20 The primary reason that accurate alignment is required is that the reader uses either a linear matrix of sensing elements, say sixty-four, or a rectangular matrix of sensing elements, say fourteen by forty. The recognition algorithms typically used in these systems assume that the sensor is oriented accurately over or across the character to be read with a misalignment of less than seven degrees typically specified. The operator's guides for
25 the present products instruct the operator to hold the reader exactly perpendicular, centered on the edge of the line to be read, not tilted, skewed, angled or rocked, and to hold this alignment during the sweep across the label. It is unsurprising that few operators use the readers in this way, and that poor read rates and dissatisfaction with the criticality of the reader alignment during scanning, have been serious problems.